

WHAT IS CLAIMED IS:

1. An apparatus for start-delay warning of an LPI engine, comprising:

a drive state detection unit for detecting a drive state of the LPI engine, the drive state detection unit comprising an ignition switch;

5 an engine control unit for generating a fuel supply signal and a warning signal on the basis of signals from the drive state detection unit;

a fuel supply unit, being activated by the fuel supply signal from the engine control unit, for supplying fuel to the LPI engine; and

a warning unit activated by the warning signal from the engine control unit.

10 2. The apparatus of claim 1, wherein the drive state detection unit comprises:

a temperature detector unit for detecting a fuel temperature of the fuel supply unit and a coolant temperature of the LPI engine;

a pressure detector for detecting a fuel pressure of the fuel supply unit; and

an engine speed detector for detecting a revolution speed of the LPI engine.

15 3. The apparatus of claim 2, wherein, when the ignition switch is turned on to a second stage, the engine control unit sends the warning signal to the warning unit and controls a fuel pump in the fuel supply unit to its maximum flow rate output speed.

4. The apparatus of claim 1, wherein the warning unit comprises a warning lamp that either stays lit or blinks when activated.

20 5. The apparatus of claim 3, wherein the engine control unit determines a target pressure on the basis of an injector temperature converted from the fuel temperature and coolant temperature.

6. The apparatus of claim 5, wherein the engine control unit controls the fuel pump to its minimal speed and stops sending of the warning signal to the warning unit when the LPI engine remains stopped and the fuel pressure of the fuel supply unit is greater than the target pressure.

5 7. The apparatus of claim 6, wherein the engine control unit stops sending of the warning signal to the warning unit when the LPI engine remains stopped and an activated period of the warning unit is greater than a predetermined period.

8. The apparatus of claim 5, wherein the engine control unit sends the fuel supply signal to the fuel supply unit when the LPI is undergoing starting and the fuel
10 pressure of the fuel supply unit is greater than the target pressure.

9. The apparatus of claim 8, wherein the engine control unit controls the fuel pump to a normal operation and stops sending the warning signal to the warning unit when an engine speed of the LPI engine becomes greater than a predetermined threshold speed while the fuel supply signal is supplied to the fuel supply unit.

15 10. A method for start-delay warning of an LPI engine comprising:
detecting a state of the LPI engine;
maintaining a start-delay warning while the state of the LPI engine is
inappropriate for starting; and
stopping the start-delay warning when the state of the LPI engine becomes
20 appropriate for starting.

11. The method of claim 10, wherein the maintaining a start-delay warning comprises:

generating a warning signal and controlling a fuel pump to its maximum flow rate output speed when an ignition switch is turned on;

determining a target pressure on the basis of an injector temperature converted from a fuel temperature of a fuel supply unit and coolant temperature;

5 detecting a maintained period of the warning when a fuel pressure of the fuel supply unit is not greater than the target pressure; and

maintaining the start-delay warning when the maintained period of warning is not greater than a predetermined period.

12. The method of claim 11, wherein the stopping the start-delay warning
10 occurs when the fuel pressure becomes greater than the target pressure.

13. The method of claim 12, further comprising controlling the fuel pump to its minimal speed when the warning signal is stopped due to the fuel pressure becoming greater than the target pressure.

14. The method of claim 11, wherein the stopping the start-delay warning
15 occurs when the maintained period of warning is greater than the predetermined period.

15. The method of claim 11, wherein the maintaining the start-delay warning comprises:

starting a fuel supply to the LPI engine when the fuel pressure of the fuel supply unit becomes greater than the target pressure; and

20 maintaining the start-delay warning until an engine speed of the LPI engine becomes greater than a predetermined threshold speed after the starting of the fuel supply to the LPI engine.

16. The method of claim 15, wherein the stopping the start-delay warning occurs when the engine speed becomes greater than the predetermined threshold speed.